DOCUMENT RESUME

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ABSTRACT

A one-week VTAE (Vocational, Technical, and Adult Education) Researcher Workshop was designed to increase the research competencies of Wisconsin VTAE staff members working with research and evaluation projects through a hands-on approach. Based on a needs assessment conducted with the participants, the agenda included sessions on various aspects of proposal writing, conducting research for impact, statistical analysis, and evaluation. Emphasis was given to instrument design, statistical analysis, and computer applications. Content presentations were followed with application sessions. Participants' evaluations of the workshop revealed that they learned most about computer use, instrument design, and research funding sources. (Appendixes amounting to approximately one-half of the report include the two needs assessment survey instruments, needs assessment results, and workshop evaluation form.) (Author/YLB)

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Orville Nelson
Co-Director
Center for VTAE

UW-Stout
Menomonie, WI

June, 1979

VTAE Researcher Workshop
June 4-8, 1979

CE 023 516

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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The director of the project wishes to express his appreciation for the encouragement and ideas received from Dr. Sherman Ansell and Roland Krogstad, research consults at the WBVTAE. Without their suggestions and support this project would not have been conducted. Also, the funding support from the WBVTAE was appreciated. This grant award made it possible to offer a quality workshop and cover the travel, meal, and lodging costs of the participants. The workshop staff members and secretarial staff at The Center for Vocational, Technical and Adult Education did an outstanding job. Their work was a critical element to the success of the project.

Abstract

The VTAE Researcher Workshop was designed to increase the research competencies of Wisconsin's VTAE staff members who were working with research and evaluation projects. An initial set of objectives was generated with the assistance of the VTAE research and planning administrators and Dr. Sherman Ansell and Roland Krogstad from the Wisconsin Board of VTAE staff. The objectives were refined and the final agenda was established based on a needs assessment conducted with the participants.

Included in the agenda were sessions on various aspects of proposal writing, conducting research for impact, statistical analysis and evaluation. Emphasis was given to instrument design, statistical analysis and computer applications.

Participants' evaluations of the workshop revealed that they learned most about use of the computer, design of instruments, and sources of research funds. Overall, their evaluations were positive - they thought that the workshop was worthwhile.

Purpose

The purpose of this workshop was to increase the research competencies of VTAE staff who were involved with designing, managing and conducting research projects in Wisconsin's VTAE system.

Objectives

The research workshop agenda and activities were designed to attain the following objectives:

1. develop a research proposal which conforms to standard criteria.
2. analyze a proposal to determine whether it contains sex role stereotyping and biases.
3. design a needs assessment survey.
4. design a Delphi study.
5. write research objectives.
6. conduct a Magerian Goal Analysis.
7. develop a research rationale.
8. develop a PERT network for research activities.
9. cost typical research activities and develop a budget.
10. identify computer applications in research.
11. develop data collection instruments for task analyses, opinion and attitude surveys, and cognitive tests.

Chapter II

Approach and Agenda

Approach

Overview

The workshop was designed to present current research processes, techniques and skills through a hands on approach. Content presentations were followed with application sessions. In addition, evening sessions were available for consultation by project staff. The evening sessions also provided and opportunity for the participants to utilize the timesharing computer equipment available to the Center (PDP 11/40 computer, dec-writer, and three CRTs.) During the workshop participants worked with several data sets. One set of data was collected from potential participants prior to the beginning of the conference. They completed the first two rounds of a Delphi needs assessment survey. These data were utilized during several of the workshop sessions.

Needs Assessment

The project director met with the VTAE research and planning administrators in November, 1978 to identify a general agenda for the workshop and potential participants. This information was used to design the draft agenda and announcement which was sent by the Wisconsin Board of Vocational, Technical and Adult Education staff to each VTAE district.

Each district was asked to identify two persons to attend this workshop. As the participant's names were received, the instrument for the first round of the Delphi needs assessment was mailed to them. (See Appendix A.) From the needs identified in this instrument, a rating scale was developed. (See Appendix B.)

The results from the needs assessment were used to adjust the content and emphasis in the workshop. Less emphasis was given to proposal writing and more emphasis was placed on statistics and computer analysis of data. Also, the needs assessment data were analyzed and discussed during the first part of the workshop. This gave the participant's exposure to computer printouts and the needs assessment process.

Agenda

The final agenda for the workshop follows.

VTAE Researchers
June 4-8, 1979

219 Applied Arts
UW-Stout

Agenda

Monday:	10:00 - 12:00		Registration (219 Applied Arts)
	12:00 - 1:00		Lunch (Commons)
June 4	1:00 - 1:45		Charge to participants (210 Applied Arts)
	1:45 - 2:00		Welcome and Overview of the Workshop
	2:00 - 2:45		The research process - An overview of the processes, tools and resources needed to design, manage and conduct vocational research. Relationship of the research process to proposal writing.
	2:45 - 3:00		Discussion Break
	3:00 - 4:00		Needs identification techniques
			*Manpower data
			*Community surveys
			*Delphi process (participants will participate in a Delphi survey prior to the workshop to determine specific skills they need)
			*Nominal group

			*Follow-up study data
			*Common data one encounters daily
	4:00	- 5:00	Application - participants develop a Delphi Survey
	5:30	- ?	Picnic
Tuesday:	8:15	- 9:15	Goal Setting
			*Goal setting processes
			*Goal analysis (Mager)
			*Establishing priorities
			*Writing research objectives
	9:15	- 10:15	Application - Participants analyze the Delphi data collected prior to the workshop and establish goals and objectives for the week. (This session will also provide a review of basic descriptive statistics.)
	10:15	- 10:30	Discussion Break
	10:30	- 12:00	After Goals - what next, developing the research rationale
			*Purpose of the rationale
			*Use of prior research
			*Sources of information - RCU, ERIC & NTIS
			*Writing the rationale
			*Developing a prospectus
	12:00	- 1:00	Lunch
	1:00	- 2:00	Research Resources - Larry Braaten
	2:00	- 3:00	Application - Participants outline rationale for the group project (project of concern to the participant could be substituted.)
	3:00	- 3:15	Discussion Break
	3:15	- 5:00	Application - Participants review results of first round of the Delphi Survey designed on Monday and design the second round of the survey.
	5:00	- 7:30	Dinner
	7:30	- 8:30	May attend PGW Evening Session
	8:00	- 9:30	Open lab for those with questions and problems
Wednesday:	8:00	- 9:00	Research Design - Basic concepts
	9:00	- 10:00	Application - Participants develop a PERT network for the group project.

	10:00 -	10:15	Discussion Break
	10:15 -	10:45	Review draft copy of Delphi Round 2 instrument
	10:45 -	12:00	Characteristics of a good proposal - Larry Braaten
	12:00 -	1:00	Lunch
	1:00 -	2:00	Costing Research activities - Preparing a budget Application - Participants cost research activities and prepare budget (VE-AS-14 and detailed budget)
	2:00 -	3:30	Handling data *Computer applications *Entering data for computer analysis *Storing data
	3:30 -	5:00	Application - Participants enter data in computer program
	5:00 -	7:00	Dinner
	7:00 -	9:00	Open Lab - Participants can use computer equipment to enter and analyze data
Thursday:	8:00 -	9:45	Statistical analysis - t test Application - Participants use the computer to run t tests on Delphi data collected and interpret the results
June 7	9:00 -	9:45	Statistical Analysis - Chi Square
	9:45 -	10:15	Application - Participants run Chi square analyses on Delphi data and interpret results
	10:15 -	10:30	Discussion Break
	10:30 -	11:15	Statistical Analysis - Correlation (Pearson and Rho)
	11:15 -	12:00	Application - Participants run correlations on Delphi data
	12:00 -	1:00	Lunch
	1:00 -	1:30	Instrument Design - General principles
	1:30 -	2:15	Instrument Design - Participants design an instrument to evaluate the workshop
	2:15 -	3:00	Discussion Break
	3:15 -	4:00	Use of computer in communicating and retrieving information - Sherman Ansell

	7:00	-	9:00	Dinner (Commons)
				*Presentation - Impacts of Research in Vocational Education - William Hull
Friday:	8:15	-	9:30	Proposal writing (integrate the components discussed during the first four days.)
June 8	9:30	-	10:00	Designing project evaluations
	10:00	-	11:30	Designing research projects to increase their impacts on practice - William Hull
	11:30	-	12:00	Evaluate Workshop
	12:00	-	1:00	Lunch - Adjourn

****

Clientele

During the period from 1973-79 the research and planning units in the VTAE schools acquired a number of new staff members. Many of the people occupying these positions had varied backgrounds and skills in the research area. The directors of these units had become more involved with planning and administrative duties and less involved with research.

Table 1 presents a summary of the participants' educational experiences and length of time they had been in their present jobs. All had at least a bachelor's degree. Most had a master's degree. One person was in her second week on the job and 39% had less than two years in their research jobs.

The participants were relatively new to their research jobs and most did not have extensive formal training in research procedures, design and statistics.

Table 1

Educational and Professional Experience of Participants

• Educational Experience-Highest Degree	Responses	
	No.	%
Bachelors Degree	4	22
Masters Degree	9	50
Specialist Degree	0	0
Doctorate	1	6
Other	0	0
Omit	4	22
Median Educational Level	Masters	
	Results	
	No.	%
• Length of time in present position		
Less than 3 months	1	6
3 months to one year	6	33
2-3 years	6	33
4-5 years	2	11
6-10 years	1	6
Over ten years	2	11
Median time in present position	2 years	

Chapter III

Results

One of the learning activities was to design an instrument to evaluate the workshop. Participants reviewed the objectives, identified the resources used, and listed the teaching processes related to effective learning. These inputs were used to construct the evaluation instrument. (See Appendix D for a copy.)

A summary of the participants' responses is given in Table 2. Participants reacted favorably to the food, facilities and computer equipment provided for them. (Mean responses of 3.8 and larger for items 1-5.) The mileage rate, 12¢ per mile, was not evaluated favorably. This rate was written in the original project proposal which was written in March, 1978.

Workshop and clerical staff members were rated high. (See items 7-13), with the exception of the evening presentations, item 18, the agenda, instructional techniques and reference materials were evaluated positively. Participants especially liked the opportunity to ask questions (item 30) and have input on the workshop content (item 29).

The main impacts of the workshop were reported to be an increased awareness of the importance of research in vocational education (28), use of the computer (25), techniques for designing research instruments (24,) identifying sources of research funds (23), and using statistics (26). The value of techniques for managing projects was also rated positively. Participants' were more undecided on the other capabilities.

A complete analysis by the length of experience of the participants is given in Appendix E. The participant's overall evaluation of the workshop

Table 2

Participants' Evaluation of VTAE
Researcher Workshop

Statements	Results Mean	N=18 Standard Deviation
1. The food was adequate.	4.4#	0.8
2. The loding was satisfactory. . .	4.2	0.9
3. Classroom temperature was comfortable.	3.8	0.8
4. Classroom facilities were adequate	4.0	0.8
5. Computer terminal access was adequate	4.1	0.8
6. Mileage compensation was satisfactory	2.7	1.3
• 7-13 Presentations/Services given by the following were good-		
7. Larry Braaten.	3.6	0.7
8. Gordon Jones	3.6	1.0
9. Harold Halfin.	4.4	0.6
10. Orv Nelson	4.7	0.6
11. William Hull	3.1	1.1
12. Computer staff	3.8	0.9
13. Secretarial staff.	4.3	0.6
14. References were related to the topics presented	4.2	0.6
15. References added depth to the topics presented	4.2	0.7
16. Alternate techniques of instructional strategy were used	3.6	0.7
17. Quality of visuals were appropriate for the room	3.6	1.1

#Response key

1 = SD = Strongly Disagree
2 = D = Disagree
3 = U = Undecided
4 = A = Agree
5 = SA = Strongly Agree

Statements	Results Mean	N=18 Standard Deviation
18. Evening presentations were well conceived.	2.9	0.7
19. Alternate evening activities were stimulating	3.4	0.9
• My participation in this workshop has improved my ability to:		
20. Write proposals	3.4	0.9
21. Manage projects	3.7	0.9
22. Develop and manage budgets.	3.3	0.8
23. Identify sources of research funds	3.9	0.5
24. Design research instruments	3.9	0.7
25. Use the computer in research. . . .	4.1	0.8
26. Use statistics in research.	3.8	1.0
27. Write effective research reports. .	3.2	0.7
28. The topics of this workshop increased my awareness/importance of research in vocational education	4.3	0.5
• Level of Involvement		
29. Adequate opportunity for input regarding workshop content.	4.2	0.5
30. Opportunity to ask questions. . . .	4.5	0.5
31. Opportunity to express individual ideas	4.1	0.7
32. Was motivated to participate. . . .	3.8	0.9
33. Allowed for time to practice concepts learned.	4.1	1.0
34. Instructor was available.	4.8	0.4
• Schedule of Activities		
35. Beginning and ending times were appropriate	4.1	1.1
36. Appropriate length of sessions. . .	4.0	1.0
37. Adequate breaks	4.3	0.6
38. Content followed logical sequence	3.7	0.9

is given in Table 3. The mean scores reported are based on a weight of 1 to 5 points for each of the 38 evaluation items in the instrument. Scores above 132 would indicate a positive evaluation of most if not all of the facets in the workshop. The average score for the 18 people completing the form was 145.8. This is in the positive range indicating that the participants were satisfied with the workshop.

Table 3

Participants' Evaluation of Workshop Based
On the Length of Time They Had Been in Present Position

	Results		
Lenth of Experience	N	Mean	Standard Deviation
Less than three months	1	153.0	0
Three months through one year	6	138.8	9.8
Two - three years	6	146.3	15.4
Four - five years	2	164.5	6.4
Six - ten years	1	146.0	0
Over ten years	2	143.0	5.7
TOTAL	18	145.8	12.8

Key: Based on 38 items, the following can be used to interpret these scores.

38 x 5 = 190 - Maximum Score, workshop rated as very good.
38 x 4 = 152
38 x 3 = 114
38 x 2 = 76
38 x 1 = 38

133: Scores of 133 and above are positive.

The mean scores by various experience levels are given in Table 3. Participants with less than three months and four to five years of

experience gave the highest ratings. Since there were very few people in these groups it is difficult to make any firm conclusions on the differences in means.

Recommendations for Future Workshops

Content

Participants were asked to identify the types of competencies they would like to develop if additional workshops were offered. The most frequent suggestions are listed below:

- Statistical analysis
- Use of the computer in research (especially for statistical analyses)
- Evaluation and research design
- Idea exchange
- Sources of research funds

Length of Future Workshops

Eight participants felt that the one week format was appropriate. Four persons suggested two to three day workshops on specifically defined topics. Other persons suggested that a one week workshop be given with three to four 1-2 day workshops later during the year.

One caution needs to be given in relation to these suggestions. This information came from persons who were able to attend a one week workshop. Those who could not attend because of work schedules were not represented.

Appendix A

First Round Survey for Needs Assessment

CVTAE
UW-STOUT

3/12/79

VTAE RESEARCHER'S NEEDS ASSESSMENT

Directions: Please respond to the following questions. Give two or three needs which come to mind for each area. You do not need to do an extensive review or study to respond to this instrument. Your responses will be summarized with those of a number of other participants. Therefore, there will be a great variety of ideas and you need not be concerned that you will miss something.

1. What competencies do you need to develop in the area of proposal writing?

2. What project management/administration competencies do you need to develop?

3. What competencies in developing project budgets and/or managing the fiscal resources of a project do you need to develop?

4. What competencies do you need in identifying sources of research funds?

5. What competencies do you need to develop for designing instruments to collect data?

6. What competencies do you need to develop for using the computer in research?

7. What competencies do you need to develop to effectively use statistics in research?

8. What competencies do you need to develop in order to write effective research reports?

(Over Please)

9. What other competencies in the research area do you need to develop?

Thank you for responding. Please return to:

Orville Nelson
Co-Director, CVTAE
Applied Arts Building
University of Wisconsin-Stout
Menomonie, Wisconsin 54751

jf

Appendix B

Second Round Survey

for

Needs Assessment

Center for Vocational, Technical
and Adult Education
UW-Stout, Form 7105.A1

5/04/79

VTAE Research Seminar
Needs Assessment

Directions: Please complete the following questions based on your experiences and needs.

Name _____ School _____

Address _____ City _____

Research and Related Experiences

1. How many years have you been in the VTAE System? *(Please check one)*

___ (1) One
___ (2) Two to three
___ (3) Four to five
___ (4) Six to ten
___ (5) Over ten

2. What types of research projects and experiences have you completed? *(Check all that apply)*

___ (1) Written a research proposal
___ (2) Conducted a research project
___ (3) Participated on the staff of a research project
___ (4) Helped to plan and/or conduct an evaluation
___ (5) Designed instruments to collect data
___ (6) Used statistics to test significance of differences in response patterns
___ (7) Written research reports
___ (8) Assisted others to conduct research
___ (9) Used a computer to analyze data
___ (10) Other _____

3. How many years have you worked with research activities?

___ (1) Have no prior experience
___ (2) One year
___ (3) Two to three years
___ (4) Four to five years
___ (5) Six to ten years
___ (6) More than ten years

4. Which of the following courses have you completed? *(Check all that apply)*

___ (1) Research design
___ (2) Survey procedures
___ (3) Research instrument design
___ (4) Evaluation techniques and/or systems
___ (5) Research management
___ (6) Proposal writing
___ (7) Descriptive statistics - mean, median, standard deviation, etc.
___ (8) Inferential statistics - t test, analysis of variance, correlation, etc.
___ (9) Advanced inferential statistics
___ (10) Other _____

- over please -

Form 7105.A2

5. What is the highest degree you have?

___ (1) Bachelors
___ (2) Masters
___ (3) Specialist
___ (4) Doctorate
___ (5) Other _____

Directions: Review each competency on the left. Indicate your need on the right. Use the following responses.

Key:
1 = N = No Need - Do not need to study this
2 = DA = Develop Awareness - Would like to know what this is
3 = RU = Review For Use - I once knew how to do this and would like to review so I can do it again
4 = DU = Develop For Use - I want to develop this so I can do it on my job
5 =DFU = Develop For Frequent Use - I want to develop this so I can do it skillfully

COMPETENCIES	EXTENT OF NEED N 1	DA 2	RU 3	DU 4	DFU 5
● Proposal Writing Competencies					
6. Writing valid objectives	1	2	3	4	5
7. Developing need statements	1	2	3	4	5
8. Preferred proposal formats	1	2	3	4	5
9. Developing budgets that are not under or over priced.	1	2	3	4	5
10. Developing the research plan	1	2	3	4	5
11. Elements of a good proposal.	1	2	3	4	5
12. Other _____	1	2	3	4	5
● Project Management					
13. Techniques for monitoring achievement of project goals.	1	2	3	4	5
14. How to locate consultants.	1	2	3	4	5
15. Assigning tasks to staff (delegating). . . .	1	2	3	4	5
16. Managing student follow-up studies	1	2	3	4	5
17. Other _____	1	2	3	4	5
● Developing and Managing Fiscal Resources					
18. Budget management.	1	2	3	4	5
19. Basic accounting procedures.	1	2	3	4	5
20. Placing items in the correct budget categories	1	2	3	4	5
21. Budgeting for miscellaneous and/or unexpected expenses.	1	2	3	4	5

- over please -

COMPETENCIES	EXTENT OF NEED N 1	DA 2	RU 3	DU 4	DFU 5
22. Projecting a budget for 3-5 years	1	2	3	4	5
23. Other _____	1	2	3	4	5
● Identifying Sources of Research Funds					
24. Sources of funds.	1	2	3	4	5
25. Use of references on sources of funds (such as the catalog of Domestic Assistance). . . .	1	2	3	4	5
26. Where to obtain information or sources of funds	1	2	3	4	5
27. Deciding what sources are realistic for my institution	1	2	3	4	5
28. Faster ways to monitor information on sources	1	2	3	4	5
29. Other _____	1	2	3	4	5
● Instrument Design					
30. Identifying what information to collect . . .	1	2	3	4	5
31. Basic data collection techniques.	1	2	3	4	5
32. Designing forms which are easy to process by computer	1	2	3	4	5
33. Designing forms which provide useable statistics.	1	2	3	4	5
34. Using matrix sampling to increase efficiency in data collection.	1	2	3	4	5
35. Interpreting written comments on instruments	1	2	3	4	5
36. Other _____	1	2	3	4	5
● Using the Computer in Research					
37. Use of a computer in processing research data.	1	2	3	4	5
38. Applications in managing projects	1	2	3	4	5
39. Operating a computer terminal	1	2	3	4	5
40. Types of statistical packages available . . .	1	2	3	4	5
41. Other _____	1	2	3	4	5
● Using Statistics in Research					
42. Selecting the appropriate statistic for a given research objective.	1	2	3	4	5
43. Sampling techniques	1	2	3	4	5

- over please -

COMPETENCIES	EXTENT OF NEED N 1	DA 2	RU 3	DU 4	DFU 5
44. Getting the most information from my data . .	1	2	3	4	5
45. Interpreting statistical tests of correlation.	1	2	3	4	5
46. Interpreting statistical tests of differences in response patterns.	1	2	3	4	5
47. Interpreting and using basic descriptive statistics (mean, standard deviation, median, mode, etc.)	1	2	3	4	5
48. Other _____	1	2	3	4	5
● Writing Effective Research Reports					
49. Designing research reports for specific audiences	1	2	3	4	5
50. Basic ingredients in writing effective reports	1	2	3	4	5
51. Alternatives to written research reports. . .	1	2	3	4	5
52. Selecting a report format	1	2	3	4	5
53. Major elements of a good research report. . .	1	2	3	4	5
54. Other _____	1	2	3	4	5
● Other					
55. Task analysis techniques.	1	2	3	4	5
56. Developing long range plans	1	2	3	4	5
57. Other _____	1	2	3	4	5

Thank you.

Please return to: *Orville Nelson*
226 Applied Arts
UW-Stout
Menomonie, WI 54751

Appendix C

Needs Assessment Results

THERE ARE 18 PEOPLE IN GROUP 0 AND 51 QUESTIONS
TOTAL- 57 QUESTIONS, 18 PEOPLE, GROUPS FROM COLUMN 5 FILE NAME-VRP059

	Student	Score	Ave.	Omit	1	2	3	4	5	6	7	8
1.		169	3.31	0.16	0.00	0.06	0.24	0.25	0.29			
2.		80	1.57	0.51	0.10	0.00	0.14	0.22	0.04			
3.		177	3.47	0.16	0.00	0.00	0.18	0.39	0.27			
4.		136	2.67	0.16	0.10	0.18	0.10	0.43	0.04			
5.		147	2.88	0.14	0.06	0.16	0.20	0.33	0.12			
6.		101	1.98	0.16	0.35	0.04	0.31	0.08	0.06			
7.		182	3.57	0.14	0.00	0.10	0.06	0.33	0.37			
8.		134	2.63	0.16	0.00	0.00	0.75	0.10				
9.		147	2.88	0.14	0.00	0.25	0.20	0.27	0.14			
10.		156	3.06	0.16	0.08	0.02	0.31	0.16	0.27			
11.		154	3.02	0.16	0.06	0.16	0.12	0.25	0.25			
12.		194	3.80	0.16	0.00	0.00	0.08	0.25	0.51			
13.		149	2.92	0.14	0.24	0.14	0.00	0.04	0.45			
14.		159	3.12	0.16	0.02	0.02	0.24	0.49	0.08			
15.		142	2.78	0.16	0.00	0.29	0.00	0.55				
16.		200	3.92	0.16	0.00	0.00	0.08	0.14	0.63			
17.		186	3.65	0.16	0.02	0.00	0.24	0.02	0.57			
18.		118	2.31	0.51	0.00	0.00	0.00	0.14	0.35			
	TOTAL	152	2.97									

QUESTION 6
Writing valid objectives

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
6	3.17	1.47	3.30	0.426	0.00	0.22	0.06	0.28	0.22	0.22		
	Q1=2.00	Q3=4.38	IQR=2.38		0	4	1	5	4	4		

QUESTION 7
Developing need statements

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
7	3.44	1.42	3.70	0.463	0.00	0.17	0.06	0.22	0.28	0.28		
	Q1=2.63	Q3=4.60	IQR=1.98		0	3	1	4	5	5		

QUESTION 8
Preferred proposal formats

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
8	3.67	1.03	3.67	0.346	0.00	0.06	0.00	0.39	0.33	0.22		
	Q1=3.00	Q3=4.42	IQR=1.42		0	1	0	7	6	4		

QUESTION 9
Developing budgets that are not under or over priced

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
9	3.72	1.13	3.83	0.361	0.00	0.06	0.06	0.28	0.33	0.28		
	Q1=3.00	Q3=4.60	IQR=1.60		0	1	1	5	6	5		

QUESTION 10
Deveoping the research plan

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
10	3.50	1.15	3.50	0.502	0.00	0.06	0.11	0.33	0.28	0.22		
	Q1=2.75	Q3=4.40	IQR=1.65		0	1	2	6	5	4		

QUESTION 11
Elements of a good proposal

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
11	3.44	1.15	3.36	0.496	0.00	0.06	0.11	0.39	0.22	0.22		
	Q1=2.71	Q3=4.38	IQR=1.66		0	1	2	7	4	4		

QUESTION 12
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
12	5.00	0.00	5.00	0.240	0.94	0.00	0.00	0.00	0.00	0.06		
	Q1=4.75	Q3=5.25	IQR=0.50		17	0	0	2	0	1		

QUESTION 13
Techniques for monitoring achievement of project goals

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
13	3.89	1.02	4.05	0.457	0.00	0.06	0.06	0.06	0.61	0.22		
	Q1=3.64	Q3=4.45	IQR=0.82		0	1	1	1	11	4		

QUESTION 14
How to locate consultants

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
14	3.22	1.35	3.50	0.457	0.00	0.17	0.11	0.22	0.33	0.17		
	Q1=2.25	Q3=4.25	IQR=2.00		0	3	2	4	6	3		

QUESTION 15
Assigning tasks to staff (delegating)

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
15	3.28	1.27	3.50	0.322	0.00	0.11	0.17	0.22	0.33	0.17		
	Q1=2.33	Q3=4.25	IQR=1.92		0	2	3	4	6	3		

QUESTION 16
Managing student follow-up studies

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
16	3.50	1.58	3.50	0.473	0.00	0.17	0.11	0.22	0.06	0.44		
	Q1=2.25	Q3=4.94	IQR=2.69		0	3	2	4	1	8		

QUESTION 17
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
17	0.00	0.00	3.50	0.000	1.00							
	Q1=2.25	Q3=4.94	IQR=2.69		18							

QUESTION 18
Budget management

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
18	3.50	1.25	3.79	0.190	0.00	0.06	0.22	0.11	0.39	0.22		
	Q1=2.36	Q3=4.43	IQR=2.05		0	1	4	2	7	4		

QUESTION 19
Basic accounting procedures

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
19	3.17	1.20	3.10	-0.019	0.00	0.06	0.28	0.28	0.22	0.17		
	Q1=2.20	Q3=4.13	IQR=1.93		0	1	5	5	4	3		

QUESTION 20
Placing items in the correct budget catagories

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
20	3.11	1.23	3.25	-0.005	0.00	0.11	0.22	0.22	0.33	0.11		
	Q1=2.13	Q3=4.08	IQR=1.96		0	2	4	4	6	2		

QUESTION 21
Budgeting for miscellaneous and/or unexpected expenses

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
21	3.22	0.94	3.30	-0.216	0.00	0.00	0.28	0.28	0.39	0.06		
	Q1=2.40	Q3=4.00	IQR=1.60		0	0	5	5	7	1		

QUESTION 22
Projecting a budget for 3-5 years

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
22	3.25	1.29	3.64	0.787	0.11	0.11	0.17	0.11	0.39	0.11		
	Q1=2.17	Q3=4.21	IQR=2.05		2	2	3	2	7	2		

QUESTION 23
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
23	0.00	0.00	3.64	0.000	1.00							
	Q1=2.17	Q3=4.21	IQR=2.05		18							

QUESTION 24
Sources of funds

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
24	3.81	1.28	4.10	0.550	0.11	0.06	0.11	0.11	0.28	0.33		
	Q1=3.00	Q3=4.83	IQR=1.83		2	1	2	2	5	6		

QUESTION 25
Use of references on sources of funds

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
25	3.56	1.09	3.83	0.600	0.11	0.06	0.11	0.11	0.50	0.11		
	Q1=3.00	Q3=4.28	IQR=1.29		2	1	2	2	9	2		

QUESTION 26
Where to obtain information or sources of funds

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
26	3.44	1.21	3.67	0.592	0.11	0.06	0.17	0.17	0.33	0.17		
	Q1=2.50	Q3=4.33	IQR=1.83		2	1	3	3	6	3		

QUESTION 27
Deciding what sources are realistic for my institution

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
27	3.44	1.36	3.70	0.696	0.11	0.11	0.11	0.17	0.28	0.22		
	Q1=2.50	Q3=4.50	IQR=2.00		2	2	2	3	5	4		

QUESTION 28
Faster ways to monitor information on sources

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
28	3.25	1.13	3.30	0.631	0.11	0.06	0.17	0.28	0.28	0.11		
	Q1=2.50	Q3=4.10	IQR=1.60		2	1	3	5	5	2		

QUESTION 29
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
29	0.00	0.00	3.30	0.000	1.00							
	Q1=2.50	Q3=4.10	IQR=1.60		18							

QUESTION 30
Identifying what information to collect

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
30	4.13	0.81	4.17	0.801	0.11	0.00	0.00	0.22	0.33	0.33		
	Q1=3.50	Q3=4.83	IQR=1.33		2	0	0	4	6	6		

QUESTION 31
Basic data collection techniques

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
31	3.56	1.26	3.70	0.779	0.11	0.11	0.00	0.28	0.28	0.22		
	Q1=2.90	Q3=4.50	IQR=1.60		2	2	0	5	5	4		

QUESTION 32
Designing forms which are easy to process by computer

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
32	4.00	1.10	4.17	0.676	0.11	0.06	0.00	0.17	0.33	0.33		
	Q1=3.50	Q3=4.83	IQR=1.33		2	1	0	3	6	6		

QUESTION 33
Designing forms which provide useable statistics

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
33	4.31	0.95	4.61	0.733	0.11	0.00	0.06	0.11	0.22	0.50		
	Q1=3.75	Q3=5.06	IQR=1.31		2	0	1	2	4	9		

QUESTION 34
Using matrix sampling to increase efficiency in data collection

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
34	4.25	0.68	4.25	0.747	0.11	0.00	0.00	0.11	0.44	0.33		
	Q1=3.75	Q3=4.83	IQR=1.08		2	0	0	2	8	6		

QUESTION 35
Interpreting written comments on instruments

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
35	4.06	1.12	4.30	0.820	0.11	0.06	0.00	0.17	0.28	0.39		
	Q1=3.50	Q3=4.93	IQR=1.43		2	1	0	3	5	7		

QUESTION 36
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
36	0.00	0.00	4.30	0.000	1.00							
	Q1=3.50	Q3=4.93	IQR=1.43	18								

QUESTION 37
Use of a computer in processing research data

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
37	4.31	1.14	4.70	0.606	0.11	0.06	0.00	0.11	0.17	0.56		
	Q1=3.83	Q3=5.10	IQR=1.27		2	1	0	2	3	10		

QUESTION 38
Applications in managing projects

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
38	3.88	1.45	4.50	0.793	0.11	0.11	0.06	0.11	0.17	0.44		
	Q1=3.00	Q3=5.00	IQR=2.00		2	2	1	2	3	8		

QUESTION 39
Operating a computer terminal

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
39	4.00	1.46	4.61	0.451	0.11	0.11	0.06	0.06	0.17	0.50		
	Q1=3.50	Q3=5.06	IQR=1.56		2	2	1	1	3	9		

QUESTION 40
Types of statistical packages available

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
40	3.88	1.54	4.61	0.806	0.11	0.11	0.11	0.06	0.11	0.50		
	Q1=2.50	Q3=5.06	IQR=2.56		2	2	2	1	2	9		

QUESTION 41
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
41	4.50	0.71	4.50	-0.042	0.89	0.00	0.00	0.00	0.06	0.06		
	Q1=4.00	Q3=5.00	IQR=1.00		16	0	0	0	1	1		

```
---------------------------------------------------------
QUESTION   42
Selecting the appropriate statistic for a given research objective
ITE
M MEAN STAN-DEV MEDIAN P-COR   0    1    2    3    4    5    6    7
 42  4.31   0.79    4.50  0.769 0.11 0.00 0.00 0.17 0.28 0.44
     Q1=3.70  Q3=5.00  IQR=1.30   2    0    0    3    5    8
-------------------
-----------------------------------------
QUESTION   43Sampling techniquesITEM
MEAN STAN-DEV MEDIAN P-COR   0    1    2    3    4    5    6    7
 43  3.69   1.20    3.75  0.692 0.11 0.06 0.06 0.28 0.22 0.28
     Q1=2.90  Q3=4.70  IQR=1.80   2    1    1    5    4    5
-------------------------------
---------------------------------QU
ESTION   44Getting the most information from my da
taITEM MEAN STAN-DEV MEDIAN P-COR   0    1    2    3
   4    5    6    7  44  4.33   0.77    4.50  0.509 0.00
0.00 0.00 0.17 0.33 0.50     Q1=3.75  Q3=5.00  IQR=1
.25   0    0    0    3    6    9 --------------------
-----------------------------------------
QUESTION   45Interpreting statistical tests o
f correlationITEM MEAN STAN-DEV MEDIAN P-COR   0    1
   2    3    4    5    6    7  45  4.00   1.03    4.13  0
.375 0.00 0.06 0.00 0.17 0.44 0.33     Q1=3.56
  Q3=4.75  IQR=1.19   0    1    0    3    8    6 -
---------------------------------------------------------
QUESTION   46Interpreting statistical t
ests of differences in response patternsITEM M
EAN STAN-DEV MEDIAN P-COR   0    1    2    3    4    5    5    7
 46  3.94   1.16    4.17  0.344 0.00 0.06 0.06 0.17 0.33 0.39
     Q1=3.33  Q3=4.86  IQR=1.52   0    1    1    3    6    7
--------------------
---------------------------------------
QUESTION   47Interpreting and using basic desc
riptive statistics ITEM MEAN STAN-DEV MEDIAN P-COR
 0    1    2    3    4    5    6    7  47  3.61   1.24
 3.70  0.482 0.00 0.11 0.00 0.33 0.28 0.28
Q1=2.92  Q3=4.60  IQR=1.68   0    2    0    6    5    5
---------------------------------------
--------------------QUESTION   480th
erITEM MEAN STAN-DEV MEDIAN P-COR   0    1    2
3    4    5    6    7  48  5.00   0.00    5.00 -0.038 0.
94 0.00 0.00 0.00 0.00 0.06     Q1=4.75  Q3=5.25  IQ
P=0.50  17    0    0    0    0    1 -------------------
-----------------------------------------
QUESTION   49Designing research reports for
 specific audiencesITEM MEAN STAN-DEV MEDIAN P-COR
0    1    2    3    4    5    6    7  49  3.83   1.20
4.00  0.604 0.00 0.06 0.06 0.28 0.22 0.39
 Q1=3.00  Q3=4.86  IQR=1.86   0    1    1    5    4    7
---------------------------------------------------
-----------QUESTION   50Basic ingredien
ts in writing effective reports ITEM MEAN STAN-DEV
M DIAN P-COR   0    1    2    3    4    5    6    7  50
3.72   1.13    3.93  0.559 0.00 0.06 0.06 0.28 0.33 0.28
     Q1=3.00  Q3=4.60  IQR=1.60   0    1    1    5    6    5
```

QUESTION 51
Alternatives to written research reports

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
51	3.78	1.17	3.83	0.151	0.00	0.00	0.17	0.28	0.17	0.39		
	Q1=2.20	Q3=4.86	IQR=2.06		0	0	3	5	3	7		

QUESTION 52
Selecting a report format

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
52	3.67	1.14	3.50	0.377	0.00	0.00	0.17	0.33	0.17	0.33		
	Q1=2.75	Q3=4.75	IQR=2.00		0	0	3	6	3	6		

QUESTION 53
Major elements of a good research report

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
53	3.61	1.09	3.67	0.646	0.00	0.06	0.06	0.33	0.33	0.22		
	Q1=2.92	Q3=4.42	IQR=1.50		0	1	1	6	6	4		

QUESTION 54
Other

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
54	0.00	0.00	3.67	0.000	1.00							
	Q1=2.92	Q3=4.42	IQR=1.50	19								

QUESTION 55
Task analysis techniques

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
55	3.44	1.20	3.30	0.227	0.00	0.00	0.29	0.28	0.17	0.29		
	Q1=2.40	Q3=4.60	IQR=2.20		0	0	5	5	3	5		

QUESTION 56
Developing long range plans

ITEM	MEAN	STAN-DEV	MEDIAN	P-COR	0	1	2	3	4	5	6	7
56	3.44	1.15	3.64	0.222	0.00	0.06	0.17	0.22	0.39	0.17		
	Q1=2.63	Q3=4.29	IQR=1.66		0	1	3	4	7	3		

TEST RELIABILITY

SOURCE	DF	SS	M.S.
AMONG INDIVIDUALS	17	329.1300	19.36060
AMONG ITEMS	50	1459.7000	29.19400
RESIDUAL	850	1209.5900	1.42305
TOTAL	917	2998.4200	3.26982

HOYT'S RELIABILITY= 0.93 SPEARMAN-BROWN RELIABILITY= 0.92
STANDARD ERROR OF MEASUREMENT= 8.5191
MEAN SCORE= 151.72 STANDARD DEVIATION= 31.42
AVERAGE RESPONSE= 2.97 01-Jun-79 03:34 PM

Appendix D

Workshop Evaluation Form

VTAE Researcher Workshop

Evaluation

Directions: Read each of the statements below and respond based on your experiences in the workshop. If you wish to comment also, place them in the margin or on the reverse side.

- Circle your responses.
- Use the following responses:

1 = SD = Strongly Disagree
2 = D = Disagree
3 = U = Undecided
4 = A = Agree
5 = SA = Strongly Agree

Statements	Responses				
	SD 1	D 2	U 3	A 4	SA 5
1. The food was adequate	1	2	3	4	5
2. The lodging was satisfactory	1	2	3	4	5
3. Classroom temperature was comfortable	1	2	3	4	5
4. Classroom facilities were adequate	1	2	3	4	5
5. Computer terminal access was adequate	1	2	3	4	5
6. Mileage compensation was satisfactory	1	2	3	4	5
7-13. Presentations/Services given by the following were good-					
7. Larry Braaten	1	2	3	4	5
8. Gordon Jones	1	2	3	4	5
9. Harold Halfin	1	2	3	4	5
10. Orv Nelson	1	2	3	4	5
11. William Hull	1	2	3	4	5
12. Computer staff	1	2	3	4	5
13. Secretarial staff	1	2	3	4	5
14. References were related to the topics presented	1	2	3	4	5
15. References added depth to the topics presented	1	2	3	4	5
16. Alternate techniques of instructional strategy were used	1	2	3	4	5

-over please-

Statements	Responses				
	SD 1	D 2	U 3	A 4	SA 5
17. Quality of visuals were appropriate for the room	1	2	3	4	5
18. Evening presentations were well conceived	1	2	3	4	5
19. Alternate evening activities were stimulating	1	2	3	4	5
• My participation in this workshop has improved my ability to:					
20. Write proposals	1	2	3	4	5
21. Manage projects	1	2	3	4	5
22. Develop and manage budgets	1	2	3	4	5
23. Identify sources of research funds	1	2	3	4	5
24. Design research instruments	1	2	3	4	5
25. Use the computer in research	1	2	3	4	5
26. Use statistics in research	1	2	3	4	5
27. Write effective research reports	1	2	3	4	5
28. The topics of this workshop increased my awareness/importance of research in vocational education	1	2	3	4	5
• Level of Involvement					
29. Adequate opportunity for input regarding workshop content	1	2	3	4	5
30. Opportunity to ask questions	1	2	3	4	5
31. Opportunity to express individual ideas	1	2	3	4	5
32. Was motivated to participate	1	2	3	4	5
33. Allowed for time to practice concepts learned	1	2	3	4	5
34. Instructor was available	1	2	3	4	5
• Schedule of Activities					
35. Beginning and ending times were appropriate	1	2	3	4	5
36. Appropriate length of sessions	1	2	3	4	5
37. Adequate breaks	1	2	3	4	5
38. Content followed logical sequence	1	2	3	4	5

39. What is the highest degree you have?

_____ (1) Bachelors
_____ (2) Masters
_____ (3) Specialist
_____ (4) Doctorate
_____ (5) Other _____

40. How long have you been in your present position? *(Please check one)*

____ (1) Less than 3 months	____ (5) Six to ten years
____ (2) Three months to one year	____ (6) Over ten years
____ (3) Two to three years	
____ (4) Four to five years	

41. If additional workshops were fun -

A. What competencies should they develop?

B. How long should they be?

APPENDIX E OF THIS DOCUMENT WAS REMOVED DUE TO REPRODUCIBILITY PROBLEMS